



## Bicycle to Vehicle (B2V) Communication Technology and Policy

Bicycles are increasingly providing transportation and recreation options to communities across the nation, which means more Americans are riding bikes across roadways not designed for their safety. The number of bicycle and pedestrian fatalities and serious injuries across the United States has been steadily rising for more than a decade, and an all methods approach to policy intervention is necessary. Advancements in digital communication technology, like B2V, offer creative solutions to enhancing road safety for people on bicycles.

PeopleForBikes, along with our industry and advocacy partners, prioritize design-based infrastructure solutions to increase safety, but we cannot ignore the growing need to leverage connected technology innovations to increase safety for people on bikes as they ride on roads and come into contact with cars. In a modernizing world, B2V technology can help fill important safety gaps and make our roads safer for all users.

### a. What is B2V?

B2V technology connects bicycles to vehicles and vice versa through a few different forms of digital communication, including Bluetooth and C-V2X. Employing sensors on bicycles (or scooters and other forms of micromobility), these devices can communicate with cars or connected infrastructure through wireless messages.

B2V is one specific way to use a [Basic Safety Message \(BSM\)](#) communications format, whereby technology in an automotive vehicle allows it to share their location, speed, and other critical information to help vehicle safety systems. Effectively, B2V is a collision avoidance technology that can promote safety where there isn't completely separated bike infrastructure.

The technology for B2V is currently being developed by a partnership of automotive, bicycle and technology companies led by Detroit-based [Tome Software](#), and based on existing industry standards.

### b. The Political Landscape for Emerging Road Safety Technology

The 117th Congress and President-elect Biden's administration should take every approach to reduce bicycle and pedestrian deaths and fatalities on U.S. roadways, which includes investing in B2V technology that can keep people riding on bikes alongside cars safe. Congress was unable to move legislation regulating the development of connected vehicle system technology (including autonomous vehicles) and will likely renew their effort in 2021.

In December of 2019, the National Transportation Safety Board issued [a report on bicycle safety](#) in the U.S. and made the following recommendations to the Department of Transportation:

- Develop minimum performance standards for connected vehicle technology for all highway vehicles
- Expand vehicle-to-pedestrian research efforts to ensure that bicyclists and other vulnerable road users will be incorporated into the safe deployment of connected vehicle systems

We support both recommendations and will work to ensure they are included in road safety legislation in 2021, alongside B2V research and investment within agencies.